**Merge Tasks Description:**

* **Task 1 : Get L1 Indexes Batch To Merge :**

the stored procedure (Transactional) responsible to get L1 index from DB ready for merge

Passing parameters should be from the application level. No hardcoded values should be there. **Using DB APP Lock concept**

After getting the list apply the application logic to select the shards you will use , reset any bad L1 index , calculate the accumulated Size and DocCount

* **Task 2 : Get L3 Indexes for optimize and Merge:**

the stored procedure responsible to get N shards of L3 index from DB ready for merge

That is not locked and active , and the stored procedure take some parameters like

RemainingDocCount

RemainingSize

NumberOfShards

And select Top NumberOfShards considering RemainingDocCount/RemainingSize

DESC or ASC

Passing parameters should be from the application level. No hardcoded values should be there**. Using DB APP Lock concept**

After getting the list apply the application logic to select the shards you will use validate and calculate the accumulated Size and DocCount ,

**unlock other shards you will not use**. If you fail to unlock add to fail queue for reprocessing

* **Task 3 : Merge L1+L3**

After having L1+L3 list, Download the remote index locally , Add L1 remotely

Create the new L3 index , merge all success fail text files , create a file , mergesuccess.file

* **Task 4 : Find new Index Directory**

The stored procedure (Transactional) responsible to get a unique folder under the group in searchindex table , **Using DB APP Lock concept** and analyze the path correctly in DB , this can detect either an early empty slot we can use , an early gap we can use or create a new slot.

After getting the folder using the application logic to check if this folder is empty to use or not , and retry if it can’t be use for 20 time.

If you fail you rollback.

* **Task 5 : Upload new L 3 Index AND Update DB records**

After obtaining a unique folder , start uploading the new L3 index

Once upload successful

Transactional

1. Update new L3 index to Active and IsLock=false
2. Update merged L3 indexes to Active = false

If any of this fail , Rollback

* **Task 6 : Update L1 index (new)**

Batch Update new L1 index merged with the new Index ID

For any update fail, add the failure action to fail action queue to be processed later for 2 hour window every some incremental interval.

* **Task 7 : Update L1 index (history)**

Batch Update new L1 index history with the new Index ID

For any update fail try 5 times, then add the failure action to Fail action queue to be processed later for 2 hour window every some incremental interval.

* **Task 8 : Deactivate Old L3 Indexes**

For each L3 index merged, send request to search manager to unload the index

Try 5 times if unsuccessful then add the failure action to Fail action queue to be processed later for 2 hour window every some incremental interval.

* **Task 9 : Delete Old L3 Merged indexes**

If Old L3 index deactivated (by checking DB Active flag), start deleting the folder if delete fail

Then then add the failure action to fail action queue to be processed later for 2 hour window every some incremental interval.

If not deactivated consider it fail then add the failure action to fail action queue to be processed later for 2 hour window every some incremental interval.

If Delete successful set IsLocked to 0

* **Task 10 : Cleanup local working Directory**

Start cleaning your local folder, if delete fail retry 5 times then add the failure action to fail action queue to be processed later for 2 hour window every some incremental interval.

* **Task 11: Fail Action Queue Processor:**

Implement a queue that can hold actions and what need to be done .

Like :

Execute SetDoneMerge(newL3Index)

Deactivate(IndexID,IndexPath)

Delete(Folder).

persist the queue data in MSMQ .

Execute the action for 2 hour window.

After failing to execute for 2 hour window , Alert EventLog ,with action details

So someone from OPS can cover it.

* **Task 12 : Rollback**

Each task will be executed as MergeStarategyStep that have rollback action , will have its own rollback steps

The rollback steps will fall in these cases

1- Unlock L1 indexes

3- Unlock L 3 indexes

4- Delete any files uploaded to new folder